UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Grid Reliability and Resilience Pricing	)	Docket No. RM18-1-000

INITIAL COMMENTS OF THE INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA

Pursuant to the Notice issued on October 2, 2017, by the Federal Energy Regulatory Commission (FERC or the Commission) in response to the Department of Energy (DOE) direction on September 28, 2017, under Section 403 of the Department of Energy Organization Act (DOE Act) (42 U.S.C. § 7173) that FERC consider a notice of proposed rulemaking (NOPR),[1] the Interstate Natural Gas Association of America (INGAA) respectfully submits these initial comments.

INGAA is a trade organization that advocates regulatory and legislative positions of importance to the natural gas pipeline industry in North America. INGAA's 26 members represent the majority of the interstate natural gas transmission pipeline companies in the United States. Its United States members are regulated by the Commission pursuant to the Natural Gas Act (NGA), 15 U.S.C. §§ 717-717w. INGAA's members, which operate approximately 200,000 miles of pipelines, serve as an indispensable link between natural gas producers and consumers.

As an industry whose core mission is the safe and reliable delivery of natural gas to meet the nation's energy needs, INGAA supports efforts by the Commission to enhance grid reliability and resilience. Wholesale electricity markets can, and should, value and incent reliability and resilience. FERC should direct regional transmission organizations (RTOs) and independent

[1] Department of Energy, Notice of Proposed Rulemaking (DOE NOPR), 18 CFR Part 35, Docket No. RM17-3-000, *Grid Resiliency Pricing Rule* (Sept. 29, 2017).

system operators (ISOs) to examine whether, and if so how, they value reliability and resilience and report their findings to the Commission within 90 days.

However, the Commission should neither adopt the NOPR, nor use it as a point of departure from which to construct any additions or modifications to wholesale electricity market rules. Instead, based on its analysis of the RTOs' and ISOs' responses, the Commission should develop promptly a new proposal to determine how best to value and incent reliability and resilience in wholesale electricity markets on a fuel-neutral basis, tailored to meet the needs of the market, which may vary by region.

I. Executive Summary

- In the years since Congress enacted the Energy Policy Act of 1992, the Commission has articulated fuel-neutral rules and policies to restructure the wholesale electric industry from a regulated cost-of-service model to a competitive market-based rate model – efforts upheld by the Supreme Court. If adopted, DOE's proposed rule (proposal) would fly in the face of those efforts and imperil the benefits of innovation and efficiency spurred by competition. The proposal provides no basis for the Commission to alter its market-based rate regime fundamentally by turning back the clock on competition.

- Natural gas and pipeline transportation are extremely reliable, as proven by the industry's record. However, there are regions and periods where pipeline capacity is constrained and primary firm gas transportation may be required for a generator to have fuel security. To the extent that policymakers and grid operators want greater assurance about the reliability of pipeline transportation in competitive wholesale power markets, particularly during peak periods when there is little to no interruptible transportation or secondary point capacity, market rules must incent resources that contract for or provide services that will ensure the desired level of reliability and resilience. The need for wholesale electricity market rules that value and incent reliability and resilience is a principle that FERC should apply on a fuel-neutral basis.

- The NOPR attempts to justify a deeply problematic policy by relying on a technical foundation fatally flawed in three ways:

    - Past experience from extreme weather events, including the Polar Vortex, the Gulf Coast hurricanes, and Superstorm Sandy, is misstated in the proposal with regard to the gas industry's performance and does not justify the proposal to provide "fuel-secure generation" with cost-based rates.

- Current grid reliability conditions – described aptly by the North American Electric Reliability Corporation (NERC) President and CEO Gerry Cauley as "strong" and "trend[ing] in the right direction" – do not justify the rushed nature of the proposal, and DOE's own experts contradict the proposal's characterization of the current source of reliability and resilience risk.

- Any expectation of future benefits resulting from rules that favor "fuel-secure generation" erroneously confuses fuel diversity with the diversity of *attributes* that a fuel mix should provide. The type of fuel diversity sought by the proposal has little bearing on future reliability and resilience.

- The proposal is unduly discriminatory in violation of Section 206 of the Federal Power Act (FPA). The proposal values reliability and resilience only for certain resources while excluding similarly situated resources – including resources fueled by pipeline-delivered natural gas – which comparatively have been reliable, resilient and secure in times of natural disasters and severe weather. Natural gas-fired generation has performed approximate to or better than "fuel-secure generation." Consequently, the NOPR is unduly discriminatory.

- The proposal fails to satisfy the Administrative Procedure Act (APA) requirements for a reasoned explanation, where the rule proposed represents a vast departure from existing FERC policy predicated on fuel-neutral, competitive wholesale markets. The proposal displays no awareness that it is a change in longstanding Commission policy, nor does it consider that billions of dollars have been invested in natural gas infrastructure in reliance on this policy. The proposal fails to make a rational connection between the problem - as it describes it - and the solution. The proposal lacks sufficient particularity and clarity to allow for meaningful and informed participation by interested parties, and, therefore, fails to satisfy the APA requirement for adequate notice.

- The NOPR should not be the basis for any rule by FERC. FERC should direct RTOs and ISOs to examine whether, and if so how, they value reliability and resilience and report their findings to the Commission within 90 days. Based on its analysis of the RTO's and ISOs' responses, the Commission should develop promptly a new proposal to determine how best to value and incent reliability and resilience in wholesale power markets in a fuel-neutral fashion, tailored to meet the needs of each regional market.

II. Natural gas generation resources are well-positioned to enhance reliability and resilience in competitive wholesale electricity markets

Before addressing the specifics of the DOE proposal, INGAA believes it is important to address the role of natural gas-fired generation and the infrastructure to supply such generators in competitive wholesale power markets. This is important, because the DOE proposal disparages the reliability of natural gas-fired generators, and implicitly the reliability and resilience of the

natural gas supply and delivery system, in attempting to make the case for the proposed grid reliability and resiliency rule.

Interstate natural gas pipelines supply a large and expanding fleet of competitive, low-cost generation facilities in ISO/RTO markets throughout the United States.[2] Natural gas has been and continues to be a reliable source of fuel for baseload, intermediate and peak power generation, in addition to being competitive on a cost basis throughout the generation cycle. The operational characteristics of the physical infrastructure for natural gas production, transmission, storage, and distribution make the interstate natural gas supply and delivery system extremely reliable and resilient.

Natural gas-fired generators have demonstrated the ability to excel in each key generator reliability attribute and performance metric, including: dispatchability, short startup times, fast ramp rates, frequency response, black start capability, and proximity to load.[3] In addition, as explained in Section III. below, the interstate natural gas pipeline system has performed well during natural disasters, and performance has improved with lessons learned from each recent major event.

Indeed, as detailed in a July 2017 Natural Gas Council report, natural gas's operational measures, physical characteristics, and contractual foundations have given natural gas an exceptional record of reliability and resilience.[4] According to an April 2017 INGAA survey of

[2] There are more than 5,700 utility-scale natural-gas fired generators in the United States, with a combined nameplate capacity of more than 500,000 MW, producing approximately 34% of the electricity generated annually. *See* Energy Information Administration, Existing Capacity by Energy Source (Release Date: November 21, 2016), available at: https://www.eia.gov/electricity/annual/html/epa_04_03.html (last visited Oct. 21, 2017).
[3] The Brattle Group, *Diversity of Reliability Attributes* (2017) at 21, Table 1 (giving natural gas generators a rating of "Relatively Advantaged" for each of these reliability attributes, as compared to other generating technologies including coal and nuclear.)
[4] Natural Gas Council, "Natural Gas Systems: Reliable & Resilient," (July 2017), http://www.ngsa.org/download/analysis_studies/NGC-Reliable-Resilient-Nat-Gas-WHITE-PAPER-Final.pdf (last visited Oct. 21, 2017).

51 interstate pipelines, over the ten-year period from 2006-2016, pipelines delivered 99.79 percent of firm contractual commitments to firm transportation customers at primary delivery points (i.e., the points specified in their contracts).[5] While this demonstrates the remarkable level of reliability enjoyed by customers who rely on firm pipeline transportation service, it must be noted that many generators in ISO and RTO markets choose to rely upon interruptible or secondary firm transportation service, instead of primary firm transportation service.

Natural gas and pipeline transportation are extremely reliable, as proven by the industry's record. However, there are regions and periods where pipeline capacity is constrained and primary firm gas transportation may be required for a generator to have fuel security. To the extent that policymakers and grid operators want greater assurance about the reliability of pipeline transportation in competitive wholesale power markets, particularly during peak periods when there is little to no interruptible or secondary firm transportation capacity, market rules must incent resources that contract for or provide services that will ensure the desired level of reliability and resilience. The need for wholesale electricity market rules that value and incent reliability and resilience is a principle that should apply on a fuel-neutral basis.

III. Competitive, fuel-neutral wholesale power markets free from undue discrimination are guiding principles of national energy policy

Wholesale power markets that are competitive, transparent, and free from undue discrimination have been bedrock policy of FERC for decades. As the Commission emphasizes:

> National policy for many years has been, and continues to be, to foster competition in wholesale power markets. As the third major federal law enacted in the last 30 years to embrace wholesale competition, the Energy Policy Act of 2005 strengthened the legal framework for continuing wholesale competition as federal policy for this country…. In each major energy bill over the last few decades, Congress has acted to open up the

[5] Natural Gas Council, "Natural Gas Systems: Reliable & Resilient," (July 2017), p. 8, available at http://www.ngsa.org/download/analysis_studies/NGC-Reliable-Resilient-Nat-Gas-WHITE-PAPER-Final.pdf (last visited Oct. 21, 2017).

wholesale electric power market by facilitating entry of new generators to compete with traditional utilities.[6]

As competitive electric markets have developed and evolved, a guiding principle has been that one generating resource should not be favored over another.[7] FERC has implemented its mandate under the FPA to ensure that wholesale electric rates are just and reasonable by encouraging and supporting RTO and ISO market rules that allow wholesale prices to be based on the lowest cost resources needed to meet demand reliably, regardless of fuel type.[8] The NOPR is a stark departure from the Commission's long-standing policy to foster competition in wholesale electricity markets with fuel-neutral policies. The NOPR would require RTOs and ISOs with energy and capacity markets, as well as real time and day-ahead markets or their functional equivalent, to modify their tariffs and market rules to compensate a particular set of fuels, technologies, and resources—coal and nuclear generating facilities. These select generating facilities would be shielded from market risk and would be able to recover fully their operating and maintenance costs and a fair return on equity[9] at enormous expense to wholesale customers and, ultimately, consumers and to the detriment of other resources, even when these other resources may be more economic or reliable. A rule that requires these RTOs and ISOs to compensate fully certain generating resources that the rule deems "eligible" would upend decades of Commission rules and policies implementing the FPA that have promoted

[6] *Wholesale Competition in Regions with Organized Electricity Markets*, Advance Notice of Proposed Rulemaking (ANOPR), 119 FERC ¶ 61,036, P 4, P 7 (2007).
[7] *See, e.g., Demand Response Compensation in Organized Wholesale Energy Markets*, Order No. 745, 76 Fed. Reg. 16,658, FERC Stats. & Regs. ¶ 31,322, P 8 (2011).
[8] FERC regularly implements the FPA by approving market rules that ensure the lowest-cost set of resources are dispatched. *See, e.g., ISO New England, Inc.*, 151 FERC ¶ 61055, P 28 (2015) ("Use of such criteria [to ensure that lowest-cost resources are accepted into the Forward Capacity Market] flows appropriately from the Commission's jurisdiction to ensure just and reasonable rates.") The Commission's use of market mechanisms to ensure just and reasonable rates, so long as these mechanisms are not susceptible to the exercise of market power, has been frequently affirmed by courts. *See, e.g., Montana Consumer Counsel v. FERC*, 659 F.3d 910, 919 (9th Cir. 2011).
[9] NOPR, pp. 11-12.

competition in wholesale electricity markets to the benefit of consumers. DOE's proposal has offered no basis upon which the Commission can justify fundamentally upending the market-based, fuel-neutral rate regime by turning back the clock on competition.

A. FERC has long embraced competitive, fuel-neutral wholesale power markets

INGAA acknowledges the importance and appropriateness of FERC playing an active role, in coordination with market participants and other stakeholders, to ensure that the electric grid is reliable and resilient. It has been more than 25 years since Congress enacted the Energy Policy Act of 1992, pivotal legislation that encouraged competitive markets for wholesale power by creating a new category of power sellers – exempt wholesale generators – and expanding FERC's authority to grant access to the transmission system for wholesale power sales.[10] Since then, the Commission has issued rules and policies to restructure the wholesale electric industry from a regulated cost-of-service model to a market-based rate model, where all resources generating electric energy for resale compete in markets and have open access to bulk power transmission.[11] With the Energy Policy Act of 2005, Congress affirmed this nation's commitment to competition in wholesale power markets.[12] As the Supreme Court has affirmed: FERC fulfills its mandate under the FPA when it "undertakes to ensure 'just and reasonable' wholesale rates by enhancing competition—attempting[…] 'to break down regulatory and economic barriers that hinder a free market in wholesale electricity.'"[13]

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[10] Pub. L. No. 102-486, § 1919, 106 Stat. 2776 (1992) (unbundling certain aspects of wholesale electricity generation and sales from utility-owned transmission service, and exempting certain merchant generators from public utility holding company regulations).

[11] *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 (1996), 61 Fed. Reg. 21,541 (1996); *Regional Transmission Organizations*, Order No. 2000, FERC Stats. & Regs. ¶ 31,089, 65 Fed. Reg. 809 (2000).

[12] Pub. L. No. 109-58, § 1241, 119 Stat. 594 (2005).

[13] *See, e.g., Elec. Power Supply Ass'n v. FERC*, 136 S. Ct. 760, 768 (2016) (quoting M*organ Stanley Capital Grp Inc. v. Pub. Util. Dist. No. 1 of Snohomish Cty*., 554 U.S. 527, 536 (2008). *See also New York v. FERC*, 535 U.S. 1, 23 (2002) (upholding FERC's decision to unbundle transmission from sales and mandate open access as part of the transition to nationwide competition).

If adopted, the proposal that "eligible grid reliability and resiliency resources"—those that burn fuel and use technologies that allow them access to a 90 day supply of on-site fuel—be paid the proposed "reliability and resiliency rate" consisting of "operating and fuel expenses, costs of capital and debt, and a fair return on equity and investment"[14] would fly in the face of decades of FERC rules, orders, and policies building a regime of market-based rate regulation with a long and steady arc promoting effective competition in electricity markets. It also would frustrate the goal of improving reliability and resiliency by disincentivizing the use of highly reliable and resilient natural gas as a fuel source. Such a drastic reversal would ignore the benefits of innovation and efficiency spurred by competition, and is unsupported even by DOE's own recent Grid Study which expressly recognized the importance of fuel neutrality in its recommendation that FERC evaluate and consider a way to value reliability and resilience attributes in its wholesale electric market rules.[15]

B. The Commission should carefully develop fuel-neutral reforms that will value and incent grid reliability and resilience

INGAA believes that wholesale electricity markets can and should value and incent reliability and resilience, but the NOPR is not a sound platform to achieve that important goal. Consistent with long-standing Commission policy, all resources should have an opportunity to compete under fuel-neutral wholesale power market rules that value the performance-based attributes contributing to reliability and resilience.

Although the NOPR identifies an important concern, the rationale for the remedy articulated in the NOPR is wholly unsubstantiated – and, as a result, arrives at the wrong answer. FERC should direct RTOs and ISOs to examine whether, and if so how, they value reliability

[14] NOPR, p. 19.
[15] DOE Staff Report to the Secretary on Electricity Markets and Reliability, p. 90, https://energy.gov/staff-report-secretary-electricity-markets-and-reliability (last visited Oct. 21, 2017) (DOE Grid Study).

and resilience and report their findings to the Commission within 90 days. Based on its analysis of the RTOs' and ISOs' responses, the Commission should develop promptly a proposal to determine how best to value and incent reliability and resilience in wholesale power markets on a fuel-neutral basis, reflecting the diversity of needs and solutions in each region. Such a solution should incentivize performance-based attributes of generation capacity, regardless of fuel type.

Facilitating more seamless coordination between the natural gas and electric industries has been a Commission priority since 2012, in light of increased reliance on natural gas for electric generation,[16] with a particular focus on ensuring each RTO/ISO incorporates lessons learned from extreme weather events.[17] That process has been successful.

Electricity consumers have benefitted and, to the extent fuel-neutrality remains a focus of the Commission, will continue to benefit from the reliability and efficiency that result from innovation in competitive wholesale electricity markets and building on the lessons learned from extreme weather events. Coordination among participants in the gas and electric sectors is stronger than ever, and needed reforms with respect to valuing and incenting grid reliability and resilience should be developed by the RTOs and ISOs, at the direction and approval of FERC, rather than through a drastic abandonment of competitive electricity markets.

IV. The NOPR's technical foundation is fatally flawed as it erroneously relies on disjointed statements regarding *past* experience from extreme weather events, *current* grid conditions, and *future* purported benefits of "fuel-secure generation"

Although opportunities to bolster the reliability and resilience of the U.S. electric power sector exist, the NOPR does not move in the direction of those opportunities. Instead, it erroneously relies on cherry-picked statements regarding: *past* experience from extreme weather

[16] *See Coordination between Natural Gas and Electricity Markets*, Docket No. AD12-12-000, 141 FERC ¶ 61,125 (2012) (Order Directing Further Conferences and Reports).
[17] *See Winter 2013-2014 Operations and Market Performance in Regional Transmission Organizations and Independent System Operators*, Docket No. AD14-8- 000 (2014) (Notice of Technical Conference).

events; *current* grid conditions; and *future* purported benefits of "fuel-secure generation" as technical justification for the rule. As a result, the NOPR should not be the basis for any rule by FERC.

A. Past experience from extreme weather events does not justify this proposed rule

There is no question that extreme weather events in the past have raised issues for the reliability and resilience of the grid, but the experience gained from these events does not provide justification for the proposed rule—even as opportunities to bolster the resilience and reliability of the U.S. electric power sector exist.

DOE's proposal misstates the record of what was observed during the extreme weather events, including the Polar Vortex; the Gulf Coast hurricanes; and Superstorm Sandy. In addition, the proposal omits comparison of natural gas and so-called "fuel-secure generation" performance during these extreme weather events. Therefore, the proposal fails as a sound basis for any rule by FERC.

Extreme Cold Weather

In February 2011, customers in the Southwest faced temperatures between -7° and 7° Fahrenheit.[18] This extreme cold weather triggered power sector disruptions and led to a six-month Commission inquiry into the causes of the disruptions.[19] The inquiry found that physical natural gas supply issues were not to blame.[20] The Commission's report stated, "Gas curtailment

[18] Jennifer E. Garner, *The Southwest Cold Snap: Extreme Weather at the Gas/Electric Interface*, Natural Resources & Environment, Vol. 27 No. 2 (Fall 2012).
[19] FERC News Release, *FERC and NERC Release Task Force Report on Southwest Outages*, Docket No.: AD11-9-000, August 16, 2011, available at http://www.ferc.gov/media/news-releases/2011/2011-3/08-16-11.asp (last visited Oct. 21, 2017).
[20] *See* FERC Staff Report, *Report on Outages and Curtailments During the Southwest Cold Weather Event of February 1-5, 2011*, (August 16, 2011), available at: http://www.ferc.gov/legal/staff-reports/08-16-11-report.pdf. (last visited Oct. 21, 2017).
[20] *Id*. at 197.

and gas pressure issues did not contribute significantly to the amount of unavailable generating capacity in ERCOT during the event."[21]

This fact pattern repeated during the 2014 "Polar Vortex," which impacted multiple regions across the country. There, FERC staff determined that pipeline firm shippers received service.[22] Specifically, FERC staff concluded: "During each of these [January and February 2014] cold events [which effected natural gas and electricity markets in the upper Midwest, the Northeast and the Southeast] customers who had firm transportation capacity on natural gas pipelines generally managed to secure natural gas deliveries."[23]

This is not to suggest there were no natural-gas related issues. However, natural gas performed approximate to or better than "fuel-secure generation" sources. Any issues were largely unrelated to the reliability of the natural gas pipelines, and had more to do with market prices and scheduling.

First, while PJM data from the 2014 Polar Vortex shows that natural gas interruptions affected 9,300 MW, natural gas generation performed approximate to or better than "fuel-secure generation".[24] Importantly, the 9,300 MW impacted represented less than 25 percent of the total forced outages and accounted for only 5 percent of the total capacity required to meet demand on the critical day of January 7, 2014.[25] Using forced outage rates as a metric, natural gas generation performed approximate to or better than "fuel-secure generators". Specifically, combined cycle (i.e., baseload) natural gas fired generators averaged lower forced outage rates

[21] *Id*.
[22] FERC Staff Report, *Winter 2013-2014 Operations and Market Performance in RTOs and ISOs* (April 1, 2014), available at: https://www.ferc.gov/legal/staff-reports/2014/04-01-14.pdf. (last visited Oct. 21, 2017).
[23] *Id*. at 4.
[24] PJM Interconnections, *Analysis of Operational Events and Market Impacts During the January 2014 Cold Weather Events* (2014), http://www.pjm.com/~/media/library/reports-notices/weather-related/20140509-analysis-of-operational-events-and-market-impacts-during-the-jan-2014-cold-weather-events.ashx (last visited Oct. 21, 2017).
[25] *Id*.

(4.29%) than baseload coal plants (7.71%) and were close to the forced outage rates for nuclear plants (3.51%).[26]

Second, the DOE proposed rule states that during the Polar Vortex, coal and nuclear generation were used "to meet customer demand during a period when already limited natural gas resources were diverted from electricity production to meet residential heating needs."

This is incorrect. There was no diversion. DOE fails to understand that pipelines transport natural gas based on firmness of contracts. Customers choose the level of reliability that they wish to rely upon by deciding whether to contract for firm or interruptible transportation (and supply). A primary firm transportation contract insulates customers from the risk of having their capacity scheduled to a higher priority customer.

The unavailability of interruptible transportation service during peak periods when higher priority firm transportation customers were using their maximum contractual entitlements does not equate to a pipeline reliability issue or evidence a pipeline performance issue. A customer enters an interruptible transportation contract with full knowledge that the pipeline will be able to accommodate its capacity requests only if there is unutilized capacity available after meeting the needs of customers that pay a firm reservation charge to ensure reliability of service. Therefore, the lack of interruptible transportation service during an extreme weather event is not a failure of gas system operations or a measure of the gas industry's performance. It may, however, be evidence that parts of the market inadequately value firm transportation service, and, as a result, do not fully avail themselves of the reliability and resilience attributes provided by natural gas

[26] *Id.*

under firm transportation agreements.[27] Ultimately, past experience from extreme cold weather events does not justify the Commission adopting the NOPR.

Gulf Coast Hurricanes and Superstorm Sandy

The reliability of natural gas pipelines during extreme weather has also been observed by DOE in the context of Gulf Coast Hurricanes and Superstorm Sandy. One 2013 DOE report concluded: "Hurricanes Irene and Sandy did not have a major impact on natural gas infrastructure and supplies in the Northeast".[28] More recently, in a series of Situation Reports by DOE staff, no issues relating to natural gas pipelines were identified after Hurricanes Harvey and Irma.[29] The interstate natural gas pipeline system has performed well during natural disasters, and performance has improved with lessons learned from each recent major storm.

Importantly, so-called "fuel-secure generation" has faced challenges during extreme weather events. The DOE Grid Study recounts that "[m]any coal plants could not operate due to conveyor belts and coal piles freezing" during the Polar Vortex and "[t]hree nuclear reactors totaling 2,845 MW of capacity were shut down, and five operated at reduced levels due to disruptions in transmission infrastructure, reduced demand from distribution outages, and precautionary measures to protect equipment" during Superstorm Sandy.[30]

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[27] Nina Hitchins and Gabrielle Maguire, *Generators' Appetite to Finance Pipeline Capacity: New England and South Australia*, NERA Economic Consulting (2015). http://www.nera.com/content/dam/nera/publications/2015/PUB_Generators_Appetite_to_Finance_Pipeline_Capacity_1115.pdf (last visited Oct. 21, 2017).

[28] DOE Office of Electricity Delivery and Energy Reliability, *Comparing the Impacts of Northeast Hurricanes on Energy Infrastructure* (2013), https://energy.gov/sites/prod/files/2013/04/f0/Northeast%20Storm%20Comparison_FINAL_041513b.pdf (last visited Oct. 21, 2017).

[29] DOE Office of Electricity Delivery and Energy Reliability, *Hurricanes Nate, Maria, Irma, and Harvey Situation Reports* (2017) https://energy.gov/oe/downloads/hurricanes-nate-maria-irma-and-harvey-situation-reports (last visited Oct. 21, 2017).

[30] DOE Grid Study, p. 98.

B. Current grid conditions neither justify nor support this proposed rule

In announcing its proposed rule, the DOE urged "swift action" as a "necessary" step to ensure the "reliability and resiliency" of the U.S. electric power sector.[31] In attempting to lay the foundation for its unprecedented proposal, DOE highlights a few statements from NERC and even from its own DOE staff reports.[32] But DOE ignores the current condition of the grid, including a full accounting of what contributes to the grid's reliability and resilience and the actual sources of risks.

1. Current grid conditions do not warrant DOE's desire for swift action

First, the current grid conditions as reported by NERC do not justify the unsound, "swift action" and rushed process associated with the DOE NOPR. In testimony on June 1, 2016, before the Commission, NERC President and CEO Gerry Cauley stated that "the state of reliability in North America is strong and continues to trend in the right direction."[33] More specifically, Cauley noted improvement in the grid's reliability and resilience in the face of extreme weather risk – one of the ostensible drivers of the DOE's proposed rule: "Winter reliability and resiliency, in terms of avoided generation outages improved as evidenced by better BPS [bulk power system] performance, due in part to the emphasis on seasonal preparation activities."[34] Not only has there been "better BPS performance," Cauley points out that "[t]here were no days in 2015 for which the daily SRI [severity risk index] made the top ten most severe list compiled between 2008 and 2015, despite extreme winter weather conditions in parts of the

[31] DOE Press Release, *Secretary Perry Urges FERC to Take Swift Action to Address Threats to Grid Resiliency* (Sept. 29, 2017), https://energy.gov/articles/secretary-perry-urges-ferc-take-swift-action-address-threats-grid-resiliency (last visited Oct. 21, 2017).
[32] NOPR, pp. 3-4.
[33] Gerry Cauley, Remarks at the FERC Reliability Technical Conference, p.1 (2016), http://www.nerc.com/news/testimony/Documents/Cauley.pdf (last visited Oct. 21, 2017).
[34] *Id*.

Eastern Interconnection (EI) rivaling the polar vortex of 2014."[35] By comparison, the polar vortex of 2014 "contributed two days to [that] top ten list."[36]

Cauley's testimony was reinforced by the Commission's own staff last week. In a presentation to the Commission on October 19, 2017, FERC staff reported that it "[does] not see major risk factors that would likely lead to significant market disruptions during this winter."[37]

Any significant policy change by the Commission should be deliberate and well-founded, rather than rushed, and should be carefully tailored to address concerns about reliability and resilience on a fuel-neutral basis. Current grid conditions do not justify otherwise.

2. Fuel supply issues have a minimal impact on grid reliability

Second, the effect of the DOE's cherry-picked statements is an inordinate focus on fuel supply (i.e., whether or not the fuel supply is "secure"). This focus is erroneous.

In fact, the DOE's *Transforming the Nation's Electricity System: The Second Installment of the Quadrennial Energy Review* (DOE QER)[38] points to a different segment of the U.S. electric power sector as a driver for actual risk: "Failures on the [electric] distribution system," rather than the fuel supply system, and concludes that these failures "are typically responsible for more than 90 percent of electric power interruptions, both in terms of the duration and frequency of outages."[39] An analysis by the Rhodium Group in October 2017 put it more starkly: "Of all the major power disruptions, nation-wide over the past five years, only 0.00007% were due to

[35] *Id*.
[36] *Id*.
[37] FERC Staff Presentation, *Winter 2017-18 Energy Market Assessment* (Oct. 19, 2017), slide 14, https://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2017/10-19-17-A-3-presented.pdf (last visited Oct. 21, 2017).
[38] NOPR, pp. 3-7.
[39] DOE/EPSA, *Transforming the Nation's Electricity System: The Second Installment of the Quadrennial Energy Review* ("DOE QER") pp. 4-29 (2017), https://www.energy.gov/sites/prod/files/2017/02/f34/Quadrennial%20Energy%20Review--Second%20Installment%20%28Full%20Report%29.pdf (last visited Oct. 21, 2017).

fuel supply problems."[40] Therefore, while opportunities to bolster the resilience and reliability of the U.S. electric power sector exist, this NOPR moves in the wrong direction and DOE's reliance on the DOE QER as support for that direction is unfounded. Again, the cited source does not support the proposed rule.

3. The NOPR mischaracterizes the DOE reports on which it relies

Third, although the proposed rule relies on the DOE's own *Staff Report to the Secretary on Electricity Markets and Reliability* (DOE Grid Study) and the DOE QER,[41] it mischaracterizes the conclusions of those reports with regard to what contributes to the grid's reliability and resilience.

(i) Market dynamics are impacting more than just coal and nuclear generating facilities and the ultimate impact of these changes is unclear

The DOE Grid Study presents a far more nuanced, complicated account of the current state of the grid than is captured in the text of the proposed rule. Most importantly, the Grid Study does not jump to — or provide support for — the conclusion that the market dynamics are leading, or will inevitably lead, to reliability or resilience issues. Furthermore, the DOE Grid Study notes that while strains on coal, nuclear, and old natural gas plants have been real and significant, the driving factors and expected trends are complex and will only become clear over time: "Market conditions will continue to be dynamic, such as with the scheduled phasing out of the wind PTC [production tax credit] and solar ITC [investment tax credit]. Trends in natural gas prices and efficiency gains would also need to be thoroughly examined and accurately forecast[ed] in order to get a clearer picture of expected retirements over the coming years."[42]

[40] Trevor Houser, John Larsen and Peter Marsters, *The Real Electricity Reliability Crisis* (2017), http://rhg.com/notes/the-real-electricity-reliability-crisis (last visited Oct. 21, 2017).
[41] NOPR, pp. 3-7.
[42] DOE Grid Study at pp. 58-59.

Further, the DOE Grid Study notes that coal and nuclear plants are not the only plants retiring: "A modest number of NGCC [natural gas-fired combined-cycle] plants are also expected to retire in the near term in this modeled scenario."[43]

(ii) Reliability arises from more than just fuel security

In terms of reliability, the NOPR fails to highlight the DOE Grid Study's emphasis on the reliability attributes of non-"fuel-secure" resources:

> Conventional generation sources—particularly hydroelectricity, combustion turbines (natural gas and oil), and steam turbines (oil, coal, and natural gas)—performed very well against most of PJM's reliability requirements…Batteries and storage meet all flexibility requirements, and DR offers high flexibility and ramping management capability. Wind and solar are highly time dependent and do not offer fuel assurance on their own, but can offer good flexibility if they have the proper controls and contractual arrangements.[44]

Similarly, the DOE QER highlights other sources of the grid's reliability and resilience. For example, the DOE QER notes that "distributed [Variable Energy Resources] are also credited with providing electric reliability and resilience benefits, particularly in the context of microgrids";[45] "[h]ydropower provides a variety of essential reliability services that are beneficial to the electricity system";[46] "[w]hen distributed storage is aggregated, it can offer local grid operators greater flexibility for managing system reliability and power quality than utility-scale resources"[47]; and demand response "is a particularly flexible grid resource, capable of improving system reliability."[48] Across both reports, the complete picture shows that many sources of both electricity and efficiency – rather than just "fuel-secure" sources – contribute

[43] *Id*. at 57.
[44] *Id*. at 86.
[45] DOE QER at pp. 4-7.
[46] *Id*. at 4-10.
[47] *Id*. at 4-14.
[48] *Id*. at 4-15.

reliability and resilience to the current condition of the grid. In short, the cited sources do not support the proposed rule.

C. Future purported benefits of "fuel-secure generation" do not justify the proposed rule

Recent studies and reports, including those cited in the NOPR, do not support the assertion that FERC must act in a market-distorting way to prevent the market's retirement of "fuel-secure generation" plants.

First, the proposal erroneously relies on one cherry-picked study's definition of fuel diversity – a study that fails to acknowledge the reliability and resilience *attributes* of non-"fuel-secure generation". Specifically, the proposed rule relies upon[49] an IHS Markit report, which states: "Quite simply, not having all of the nation's eggs in one basket makes a power supply portfolio a cost-effective risk management strategy, because the short-run price and deliverability excursions from normal conditions, the longer-run fuel price cycles, and the infrastructure development and deliverability constraints are not highly correlated through time across generating technologies and fuel sources."[50] Unfortunately, this study makes erroneous assumptions of what constitutes fuel diversity.

The recent PJM report, *PJM's Evolving Resource Mix and System Reliability*, provides a fuller picture by accounting for the diversity of *attributes* that a fuel mix can provide. While the IHS Markit report fails to account for flexibility and ramping of non-"fuel-secure" resources, the March 2017 PJM report more accurately concludes: "As the potential future resource mix moves in the direction of less coal and nuclear generation, generator reliability attributes of frequency

[49] NOPR, p. 5.
[50] IHS Markit Report, *Ensuring Resilient and Efficient Electricity Generation*, p. 4 (2017), https://www.globalenergyinstitute.org/sites/default/files/Value%20of%20the%20Current%20Diverse%20US%20Power%20Supply%20Portfolio_V3-WB.PDF (last visited Oct. 21, 2017).

response, reactive capability and fuel assurance decrease, but flexibility and ramping attributes increase." [51]

The reason for this disconnect is grounded in IHS Markit's analytic failure to capture the reliability aspects of natural gas. In contrast, PJM found that "[p]ortfolios composed of up to 86 percent natural gas-fired resources maintained operational reliability."[52] In fact, PJM's "analysis did not identify an upper bound for natural gas."[53]

The May 9, 2017, letter from NERC to Secretary Perry reinforces the conclusion that the IHS Markit report makes inappropriate assumptions of what constitutes fuel diversity. The NERC letter provides a more complex definition of accounting for fuel diversity:

> As the generation resource mix evolves, the reliability of the electric grid depends on the operating characteristics of the replacement resources. Natural gas-fired units, variable generation, storage, and other resources can provide similar reliability services. However, as a practical matter, costs, market rules, or regulatory requirements (or lack thereof) can affect whether these resources are equipped and available to provide reliability services. To ensure reliability, new generator and load resources must maintain the balance between load and generation, especially during ramping periods. In addition, in some jurisdictions, substantial amounts of generation is now being added "behind the meter" (e.g., roof top solar) and these resources are invisible to system operators.[54]

Second, the proposed rule is justified based on an erroneous assumption of how the aforementioned narrowly defined fuel diversity contributes to future reliability.[55] Future reliability counts on a mix of attributes rather than a limited, flawed "fuel diversity." PJM's analysis supports this conclusion: "More diverse portfolios are not necessarily more reliable; rather, there are resource blends between the most diverse and least diverse portfolios which

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[51] PJM Interconnection, *PJM's Evolving Resource Mix and System Reliability*, p. 5 (March 2017), http://www.pjm.com/~/media/library/reports-notices/special-reports/20170330-pjms-evolving-resource-mix-and-system-reliability.ashx (last visited Oct. 22, 2017).
[52] *Id.*
[53] *Id.*
[54] Letter from Gerry Cauley, NERC President, to Rick Perry, DOE Secretary, p. 2 (May 9, 2017), https://www.eenews.net/assets/2017/10/03/document_ew_01.pdf (last visited Oct. 21, 2017) ("NERC Letter").
[55] NOPR at pp. 5-7.

provide the most generator reliability attributes."[56] The May 9, 2017, NERC letter to Secretary Perry also makes a complementary point: "Generating resources need to be able to provide voltage control, frequency support, and ramping capability as essential reliability services to balance and maintain the electric grid. Without these characteristics, the grid could not be operated reliably."[57]

There is no reason to believe that the diversity of *attributes* needed to ensure future reliability can only come from a reliance on "fuel-secure generation". As noted above, PJM's analysis shows that: "As the potential future resource mix moves in the direction of less coal and nuclear generation, generator reliability attributes of frequency response, reactive capability and fuel assurance decrease, but flexibility and ramping attributes increase."[58] And as a Brattle Study notes, these attributes are available from a variety of non-"fuel-secure generation" sources: "Newer natural gas combined cyclers ("CCs") and combustion turbines ("CTs"), reciprocating internal combustion engines ("RICE units"), aeroderivatives, pondage hydro, demand response, and storage have relatively short start times and fast ramp rates."[59] These studies demonstrate that the assumption that there is a causal relationship between fuel-secure generation and future reliability is erroneous and, therefore, unsound justification for the proposed rule.

V. The NOPR is unduly discriminatory in violation of Section 206 of the FPA

Section 206 of the FPA prohibits, among other things, undue discrimination and undue preference with respect to any transmission or sale subject to the jurisdiction of the Commission.[60] Grounding its legal authority in Sections 205 and 206, FERC has wielded this

[56] *Id*. at 5.
[57] NERC Letter, p. 7.
[58] PJM Interconnection, *PJM's Evolving Resource Mix and System Reliability*, p. 5.
[59] Brattle Group Study, *Diversity of Reliability Attributes: A Key Component of the Modern Grid*, p. 23 (2017) https://sites.hks.harvard.edu/hepg/Papers/2017/Brattle_20170517-API-Diversity-of-Attributes.pdf (last visited Oct. 21, 2017).
[60] 16 U.S.C. § 824(e).

authority to remedy undue discrimination in transitioning wholesale electric prices from cost-based to competition-based markets and has remedied unduly discriminatory practices in wholesale electric markets.[61]

Disparate treatment of similarly-situated wholesale resources that compete to sell products and services in the wholesale electricity markets can be undue discrimination in violation of Section 206.[62] Gas-fired, coal-fired, and nuclear generation resources are similarly situated with respect to most products and services they are capable of offering in the ISO and RTO markets.[63] Ultimately, it is the Commission's burden to demonstrate that the disparate rate treatment proposed in the NOPR is not unduly discriminatory.[64] As it stands, however, the NOPR is remarkably bare of such evidence.

The NOPR's proposal values reliability and resilience only for certain resources—coal and nuclear generation—while excluding other similarly situated resources including resources fueled by pipeline delivered natural gas which comparatively have been reliable, resilient and secure in times of natural disasters and severe weather. Consequently, the NOPR is unduly discriminatory.[65]

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[61] *See, e.g., Transmission Access Policy Study Group v. F.E.R.C.*, 225 F.3d 667 (affirming FERC Orders 888 and 889).

[62] *Integration of Variable Energy Resources*, Order No. 764, 139 FERC ¶ 61,246, P 6–9 (2012); *Small Generator Interconnection Agreements & Procedures*, Order No. 792, 145 FERC ¶ 61,159, P 15, 21–23 (2013). Due to "changing conditions in the electric utility industry, e.g., the emergence of non-traditional suppliers and greater competition in bulk power markets, the focal point of claims of undue discrimination [is]…discrimination in the rates and services" offered to similarly situated suppliers competing in the markets. *Am. Elec. Power Serv. Corp.*, 67 FERC ¶ 61,168, at 61,490 (1994).

[63] *Supra* Section II.

[64] The NOPR failed to justify a Commission finding under Section 206 of the FPA that the current RTO's and ISO's tariffs are unjust and unreasonable. Such a finding is required for the Commission to order RTOs and ISOs to amend their tariffs as proposed in the NOPR; the NOPR does not provide substantial evidence for the Commission to make such a finding.

[65] Cf. *Advanced Energy Management Alliance v. FERC*, 860 F.3d 656, 670-71 (D.C. Cir. 2017) (the proposed RTO market rule "not an undue privileging of one resource's costs over another's" (dicta)), *affirming PJM Interconnection, LLC*, Order on Rehearing and Compliance, 155 FERC ¶ 61,157 at P 48-51 (proposed RTO market rule limiting types of resources that may submit aggregated offers "reasonably distinguishes between resource types and is therefore not unduly discriminatory").

One generating resource should not be favored over another.[66] Fuel neutrality is essential for any proposed market rules to comply with the FPA mandate prohibiting unduly discriminatory or unduly preferential rates. The NOPR is inconsistent with that mandate and must be rejected.

VI. The NOPR fails to satisfy the Administrative Procedure Act requirements to show a rational connection between the problem and the solution and to provide adequate notice and is fatally flawed

A. The NOPR proposes a vast departure from existing policy, without adequate explanation

Although the proposal is lacking in essential detail and untenably vague, one thing is clear: it is a stark change in course from this Commission's policies for encouraging and supporting the operations of competitive wholesale electricity markets. An administrative agency that proposes a fundamental and sweeping rule change must establish in the proposal a "rational connection between the facts found and the choice made…to pass muster under the 'arbitrary and capricious' standard."[67] An agency's view of what is in the public interest may change, either with or without a change in circumstances. But an agency changing its course must supply a reasoned analysis ..."[68]

The NOPR does not even acknowledge that its proposal is a change in course for the Commission's market rules. To satisfy the APA requirement to provide a reasoned explanation, a proposed rule that injects fundamental change in the Commission's policy direction must actually acknowledge that to be the case, because the agency's "settled course of behavior" (in

[66] *See, e.g., Demand Response Compensation in Organized Wholesale Energy Markets*, Order No. 745, 76 Fed. Reg. 16,658, FERC Stats. & Regs. ¶ 31,322, P 8 (2011).
[67] *Motor Vehicle Mfrs. Assn of United States Inc. v. State Farm Mut. Automobile Ins. Co*., 463 U.S. 29, 43, citing *Burlington Truck Lines, Inc. v. United States* 371 U.S. 156, at 168.
[68] *Id*. at 57, quoting *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 852 (CADC), cert. denied, 403 U.S. 923 (1971).

this case, FERC's policies encouraging and supporting competitive price setting in wholesale electric markets) "creates a presumption that the course it chose previously best carries out the policies committed to it by Congress."[69] Nothing in the NOPR acknowledges the policy shift that the proposed "reliability and resiliency rule" represents.

FERC policies supporting competition in wholesale electricity markets have engendered decades of industry reliance. A proposal to adopt a rule that changes these policies must take that into account in its reasoned explanation in support of the rule.[70] Non-utility generators and others have invested substantially in reliance on the Commission's longstanding policies. In addition, the demand for pipeline capacity created by the shift to greater utilization of gas-fired electric generation has been a significant impetus for the expansion of interstate natural gas pipeline infrastructure in recent decades. Interstate natural gas pipelines have invested billions of dollars in infrastructure. For example, an ICF study in 2014 estimated investment in natural gas infrastructure at roughly $10 billion each year over the past decade.[71]

The NOPR disregards the extensive support for the Commission's policies encouraging competitive wholesale electricity markets in rulemakings and Commission orders approving utility and ISO/RTO tariffs and in government and industry reports and studies, many of which the proposal cites. When a proposed agency reversal of policy "rests upon factual

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[69] *Atchison, T & S.F.R. Co. v. Wichita Bd. Of Trade*, 412 U.S. 800, 807 (1973). *See FCC v. Fox Television Stations, Inc*. 556 U.S. 502, 515 (a reasoned explanation of the relevant factors "ordinarily demand[s] that [the agency] display awareness that it is changing position").

[70] *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016) citing *National Cable & Telecommunications Assn. v. Brand X Internet Services*, 545 U.S. 967, 981–982 (2005) and *United States v. Mead Corp*., 533 U.S. 218, 229–230 (2001). *See also Smiley v. Citibank (South Dakota), N.A*., 517 U.S. 735, 742 (1996) ("sudden and unexplained change…" or "change that does not take account of legitimate reliance on prior interpretation" may be arbitrary and capricious or an abuse of discretion); *Fox*, 556 U.S. at 515-16 (where agency policy has "engendered serious reliance interests…" it would be arbitrary and capricious to "ignore" or "disregard" such interests).

[71] Jennifer A. Dlouhy, *US energy boom demands $641B in infrastructure, study* (March 18, 2014) http://fuelfix.com/blog/2014/03/18/report-641-billion-in-infrastructure-needed-by-2035 (last visited Oct. 21, 2017). The analysis was co-sponsored by America's Natural Gas Alliance and the INGAA Foundation, an organization affiliated with INGAA.

findings that contradict those which underlay [the agency's] prior policy" the proposal must provide a reasoned explanation for departing from its earlier findings. To "ignore such matters" is arbitrary and capricious and fails to satisfy the requirements imposed by the APA.[72]

The NOPR fails to make the critical "rational connection" between the issue it raises—that wholesale power markets do not adequately value or price generation attributes that support the reliability and resilience of the bulk power system—and the solution it proposes. For example, only resources with a 90-day supply of fuel on site would qualify to receive the proposed "reliability and resiliency rate." The proposal contains no analysis or rationale for 90 days. The proposal draws no connection between that supply requirement and achievement of the desired end of "develop[ing] and implement[ing] market rules that accurately price generation resources necessary to maintain the reliability and resiliency of our Nation's bulk power system."[73] Moreover, the proposal does not explain its reasoning for abandoning wholesale power market rules that are fuel neutral and allow all resources to compete.

The proposal fails to satisfy bedrock requirements of the APA, and accordingly "cannot be the foundation of a new [FERC] rule."[74]

B. The NOPR does not provide adequate notice as required by the APA

The APA requirement that an agency publish notice when it proposes a change in its rules is that the notice is adequate. A notice of proposed rulemaking must "provide sufficient factual detail and rationale for the rule to permit interested parties to comment meaningfully."[75]

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[72] *Encino, supra*, citing *National Cable & Telecommunications Assn. v. Brand X Internet Services*, 545 U.S. 967, 981–982 (2005) and *United States v. Mead Corp*., 533 U.S. 218, 229–230 (2001); *Perez v. Mortgage Bankers Association*, 135 S. Ct. 1199 (2015). *See also Fox v. FCC*, 556 U.S. at 515-16; *Humane Society of the United States v. Locke*, 626 F.3d 1040, 1051 (9th Cir. 2010).
[73] NOPR, p. 11.
[74] *Encino* at 2127, citing 5 U.S.C. § 706(2) (A); *State Farm*, at 42–43.
[75] *Honeywell International, Inc. v. EPA*, 372 F.3d 441, 445 (D.C. Cir. 2004).

There must be sufficient particularity and clarity to allow meaningful and informed participation by interested parties.[76]

The proposal lacks the requisite particularity and clarity to meet the APA's standards for adequate notice. The proposal is legally deficient on its face, as evidenced by the fact that FERC staff issued more than 50 questions it wished to have addressed "in order to assist Staff in understanding the implications of the proposed rule."

The proposal is problematic in another respect. The timeline that: FERC issue the "reliability and resiliency rule" as a final rule within 60 days; the RTOs and ISOs submit compliance filings within 15 days after the rule's effective date; and such filings would be effective 15 days after filing[77]—is extraordinary and out of line with any reasonable schedule for a proposed rule change, especially a rule change that reverses longstanding Commission policies supporting competitive wholesale markets. The NOPR fails to articulate any exceptional circumstances that could possibly support such a dramatically compressed proceeding.

VII. Conclusion

For the reasons set forth in these initial comments and the comments of the Joint Industry Group, the foundation of the NOPR is flawed and should not be the basis for any rule by FERC. The Commission should direct RTOs and ISOs to examine whether, and if so how, they value and incent reliability and resilience and report their findings to the Commission within 90 days. Based on its analysis of the RTOs' and ISOs' responses, INGAA urges the Commission to develop promptly a new proposal to determine how best to value and incent reliability and resilience in wholesale power markets on a fuel-neutral basis, tailored to meet the needs of the market, which may vary by region.

[76] *See, e.g., American Medical Association v. US*, 887 F.2d 760 (7th Cir. 1989).
[77] NOPR at pp. 1, 13.

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